

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) The apparatus of claim ~~74~~73, wherein:

(1) infrastructure data for the connection handling functionality is distributed among the plural processors of the processor cluster; and

(2) connection data is created on a selected processor of the processor cluster when an on demand connection is established at the selected processor.

2. (Currently Amended) The apparatus of claim ~~74~~73, wherein the processor cluster handles AAL2 connections.

3. (Currently Amended) The apparatus of claim ~~74~~73, wherein the processor cluster includes a predistributor which routes incoming signaling messages to an appropriate processor of the processor cluster.

4. (Original) The apparatus of claim 3, wherein the predistributor resides on one of the plural processors of the cluster which handles connections.

5. (Original) The apparatus of claim 3, wherein a processor of the node which does not handle connections serves as the predistributor.

6. (Cancelled)

7. (Currently Amended) The apparatus of claim ~~61~~61, further comprising an administrator processor which distributes the infrastructure data among the plural processors of the processor cluster.

8. (Currently Amended) The apparatus of claim 1, wherein resource handling data is partitioned among the plural processors of the processor cluster, the resource handling data including data concerning resources of a node.

9. (Currently Amended) The apparatus of claim 1, wherein resource handling data is dynamically partitioned among the plural processors of the processor cluster, the resource handling data including data concerning resources of a node.

10. (Cancelled)

11. (Original) The apparatus of claim 1, wherein when a connection is to be set up to another node, an instance of a connection object is established in a selected one of the processors of the cluster, and wherein the connection object both reserves and activates resources of the node.

12. (Original) The apparatus of claim 11, wherein the connection object reserves a resource of the node by communicating with an instance of a resource control object executed by a processor of the cluster.

13. (Original) The apparatus of claim 12, wherein the instance of the resource control object is executed by a same processor which executes the connection object.

14. (Original) The apparatus of claim 12, wherein the instance of the resource control object is executed by a different processor than the processor which executes the connection object.

15. (Original) The apparatus of claim 12, wherein the connection object determines which instance of a link resource control object with which to communicate by communicating with a routing object executed by a processor of the cluster.

16. (Original) The apparatus of claim 11, wherein the connection object activates a resource of the node by communicating with an instance of a resource user plane object executed by a processor of the cluster.

17. (Original) The apparatus of claim 16, wherein the instance of a resource user plane object is executed by a same processor which executes the connection object.

18. (Original) The apparatus of claim 12, wherein the instance of the resource user plane object is executed by a different processor than the processor which executes the connection object.

19. (Original) The apparatus of claim 11, wherein in setting up the connection to the another node, the connection object uses a signaling object to send a connection establish signaling message to the another node.

20. (Original) The apparatus of claim 19, wherein the connection object communicates with a signaling object executed by a processor of the cluster in order to send the connection establishment signaling message to the another node.

21. (Cancelled)

22. (Previously Presented) The apparatus of claim 3, wherein for a path incoming to the node the processor cluster has an instance of a resource control path object executed by one of the processors of the cluster, and wherein the instance of the resource control path object handles signaling for the path or for a unique connection identifier within the path, and wherein the predistributor distributes certain signaling messages or indications concerning the path to the instance of the resource control path object.

23. (Original) The apparatus of claim 22, wherein the path is an AAL2 path handling Q.2630.1 signaling.

24. (Original) The apparatus of claim 22, further comprising an instance of a resource control signaling relation object representing plural paths having a signaling relation, and wherein the predistributor distributes certain signaling messages or indications concerning the signaling relation path to the instance of the resource control signaling relation object .

25. (Previously Presented) The apparatus of claim 3, wherein the predistributor comprises at least one distribution table which is used for routing the incoming signaling message.

26. (Original) The apparatus of claim 25, wherein the predistributor has a distribution table which uses at least one of the following for routing the incoming signaling message: destination signaling association identifier (DSAI); served user generated reference (SUGR); signaling link identity; path identity.

27. (Original) The apparatus of claim 26, wherein the predistributor has four distribution tables, and wherein each of the following are utilized by at least one of the four distribution tables for routing the incoming signaling message: destination signaling association identifier (DSAI); served user generated reference (SUGR); signaling link identity; path identity.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Currently Amended) The method of claim ~~7277~~, further comprising:

(1) distributing infrastructure data for the connection handling functionality among the plural processors of the processor cluster; and

(2)

~~(3)~~ creating connection data on a selected processor of the processor cluster when an on demand connection is established at the selected processor.

37. (Currently Amended) The method of claim ~~7277~~, further comprising handling AAL2 connections at the node.

38. (Currently Amended) The method of claim ~~7277~~, further comprising using a predistributor to route incoming signaling messages to an appropriate processor of the processor cluster.

39. (Original) The method of claim 38, further comprising situating the predistributor at one of the plural processors of the cluster which handles connections.

40. (Original) The method of claim 38, further comprising situating the predistributor at a processor of the node which does not handle connections.

41. (Cancelled)

42. (Currently Amended) The method of claim ~~41~~36, further comprising using an administrator processor to distribute the infrastructure data among the plural processors of the processor cluster.

43. (Currently Amended) The method of claim 36, further comprising partitioning resource handling data among the plural processors of the processor cluster, the resource handling data including data concerning resources of a node.

44. (Currently Amended) The method of claim 36, further comprising dynamically partitioning resource handling data among the plural processors of the processor cluster, the resource handling data including data concerning resources of a node.

45. (Cancelled)

46. (Original) The method of claim 36, wherein, when a connection is to be set up to another node, performing the steps of:

establishing an instance of a connection object in a selected one of the processors of the cluster; and

using the connection object to both reserve and activate resources of the node.

47. (Original) The method of claim 46, further comprising the connection object reserving a resource of the node by communicating with an instance of a resource control object executed by a processor of the cluster.

48. (Original) The method of claim 47, further comprising executing the instance of the resource control object at a same processor which executes the connection object.

49. (Original) The method of claim 48, further comprising executing the instance of the resource control object at a different processor than the processor which executes the connection object.

50. (Original) The method of claim 46, further comprising the connection object determining which instance of a link resource control object with which to communicate by communicating with a routing object executed by a processor of the cluster.

51. (Original) The method of claim 50, further comprising the connection object activating a resource of the node by communicating with an instance of a resource user plane object executed by a processor of the cluster.

52. (Original) The method of claim 51, further comprising executing the instance of a resource user plane object by a same processor which executes the connection object.

53. (Original) The method of claim 51, further comprising executing the instance of the resource user plane object at a different processor than the processor which executes the connection object.

54. (Original) The method of claim 46, further comprising the connection object using a signaling object to send a connection establish signaling message to the another node in setting up the connection to the another node.

55. (Original) The method of claim 54, further comprising the connection object communicating with a signaling object executed by a processor of the cluster in order to send the connection establishment signaling message to the another node.

56. (Cancelled)

57. (Original) The method of claim 38, wherein for a path incoming to the node the processor cluster has an instance of a resource control path object executed by one of the processors of the cluster, and wherein the instance of the resource control path object handles signaling for the path or for a unique connection identifier within the path, and further

comprising the predistributor distributing certain signaling messages or indications concerning the path to the instance of the resource control path object.

58. (Original) The method of claim 57, wherein the path is an AAL2 path handling Q.2630.1 signaling.

59. (Original) The method of claim 57, further comprising an instance of a resource control signaling relation object representing plural paths having a signaling relation, and wherein the predistributor distributes certain signaling messages or indications concerning the signaling relation path to the instance of the resource control signaling relation object .

60. (Currently Amended) The method of claim ~~56~~38, further comprising providing the predistributor with at least one distribution table for use in routing the incoming signaling message.

61. (Original) The method of claim 60, wherein the distribution table which uses at least one of the following for routing the incoming signaling message: destination signaling association identifier (DSAI); served user generated reference (SUGR); signaling link identity; path identity.

62. (Original) The method of claim 60, wherein the predistributor has four distribution tables, and wherein each of the following are utilized by at least one of the four distribution tables for routing the incoming signaling message: destination signaling association identifier (DSAI); served user generated reference (SUGR); signaling link identity; path identity.

63. (Cancelled)

64. (Cancelled)

65. (Cancelled)

66. (Cancelled)

67. (Cancelled)

68. (Cancelled)

69. (Cancelled)

70. (Cancelled)

71. (Cancelled)

72. (Cancelled)

73. (New) A node of a data communications network comprising:
a switch;

plural user plane resources connected to the switch, the plural user plane resources comprising one or more of link resources and end system resources involved in a bearer service connection;

a cluster of plural processors;

connection handling functionality distributed over the cluster of the plural processors , the connection handling functionality being configured to facilitate execution of at least some non-signaling software objects executed for setup or release of a first connection on a different processor of the cluster than at least some non-signaling software objects executed for setup or release of a second connection.

74. (New) A apparatus of claim 73, wherein signaling software objects for the first connection and the second connection are handled by a same processor.

75. (New) A apparatus of claim 73, wherein at least some of the non-signaling objects for the first connection are handled on a different processor than other non-signaling objects for the first connection.

76. (New) A apparatus of claim 73, wherein the at least some non-signaling software objects include the following:

a user object configured to order the setup or the release of the connection by creating a connection object;

the connection object, the connection object being configured to store connection data, to request routing data from a routing object, to reserve resources with a resource control object; to request infrastructure data from an infrastructure data object, and to activate a resource user plane object;

the routing object, the routing object being configured for mapping signaling resources and link resources;

the resource control object, the resource control object being configured for keeping a resource picture for the user plane resources;

the infrastructure data object, the infrastructure data object being configured to include an indication of where resource user plane instances are located;

the resource user plane object, the resource user plane object corresponding to a particular user plane resource involved in the connection.

77. (New) A method of operating a data communications network node, the node comprising a switch; plural user plane resources connected to the switch, the plural user plane resources comprising one or more of link resources and end system resources; a cluster of plural processors; wherein the method comprises:

using the plural user plane resources for at least one bearer service connection;
distributing a connection handling functionality over the cluster of the plural processors whereby at least some non-signaling software objects are executed for setup or release of a first connection on a different processor of the cluster than at least some non-signaling software objects executed for setup or release of a second connection.

78. (New) The method of claim 77, further comprising handling signaling software objects for the first connection and the second connection by a same processor.

79. (New) The method of claim 77, further comprising handling at least some of the non-signaling objects for the first connection on a different processor than other non-signaling objects for the first connection.

80. (New) The method of claim 77, wherein execution of the at least some non-signaling software objects include executing the following:

a user object configured to order the setup or the release of the connection by creating a connection object;

the connection object, the connection object being configured to store connection data, to request routing data from a routing object, to reserve resources with a resource control object; to request infrastructure data from an infrastructure data object, and to activate a resource user plane object;

the routing object, the routing object being configured for mapping signaling resources and link resources;

the resource control object, the resource control object being configured for keeping a resource picture for the user plane resources;

the infrastructure data object, the infrastructure data object being configured to include an indication of where resource user plane instances are located;

the resource user plane object, the resource user plane object corresponding to a particular user plane resource involved in the connection.